Intelligence-powered purchasing

From staff planning, distribution and logistics to interest-based offers for customers – the retail sector calls for an exceptionally wide range of IT applications. André Naef takes a look at the past and the future.

Ergon undertook its first retail project in 1997 for Migros: the "Hattrick" software that enabled branch managers to forecast staffing requirements on the basis of sales forecasts in article segments. Hattrick was in operation for many years at Migros. I myself joined Ergon in 2000, and I've worked in various industries. "Jazz", my first retail project, was launched for the Coop supermarket chain in 2005. Their CIO knew of us from Migros, and he was looking for a new solution to handle staff time recording.

The idea that time recording had to be something simple turned out to be a misconception. The complexities were revealed as we delved deeper into the subject. Shift schedules, allowances, time adjustments, stamping dates, approval procedures, daily plans, tour plans and many other concepts had to be understood in detail and converted into code form. Most of the functional areas we developed needed three passes. The first iteration was not adequate for the complexity, the second could not be operated intuitively enough and only the third one hit the "sweet spot". Our application met all the requirements and went live in summer 2006 – to Coop's satisfaction.

Competitive edge for one customer becomes a solution for many

When the Head of IT for the Migros Cooperative Zurich also came knocking on our door to ask whether they could use Jazz, Coop gave us permission to generalise our software and to develop a solution from it that could also be used by other retailers.

There is an additional challenge within Migros: its individual cooperatives are highly autonomous, so they are not all obliged to opt jointly for a new, central solution. However, we managed to define a procedure that would serve as
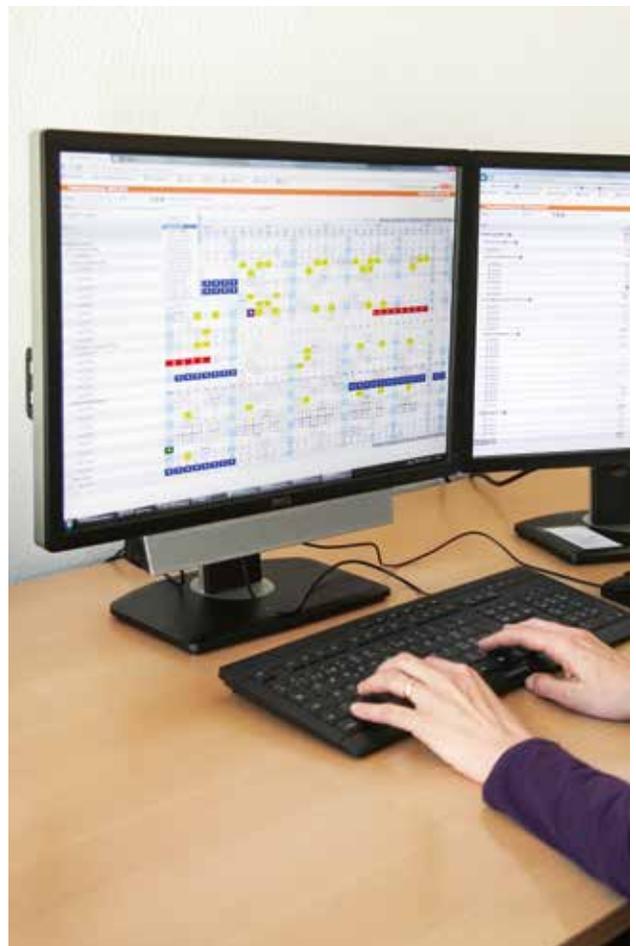
Staff deployment planning for retailers

the basis for introducing the system in many, though not all, of the cooperatives.

It is quite unusual for companies to agree to use common software that is actually intended to enhance their own competitive edge. But it makes sense in the case of time management, because this approach reduces the maintenance costs that each company must pay for the software. "Zebra", the software that is in use nowadays, replaced Jazz in 2009. It has a common core for all the participating enterprises but can be configured to customers' specific requirements.

Managing large data volumes intelligently

In 2010, we began to implement an even more challenging project for Coop: mobile stock control. The volumes of data in retailing are immense – they comprise the positions and movements for up to 10 million articles in 1,000 sales outlets throughout Switzerland.

Coop's existing tool had reached its limits. Our objective with "Ergo" was to support mobile stock control, and to do so in real time: stock management, purchase orders, merchandise received, merchandise write-downs, inventory, and so on. Many aspects could be automated, but there also had to be the possibility of manual intervention so that more or less barbecue meat (for example) could be ordered according to the weather. Our new "Ergo" software had to function smoothly in the existing SAP environment. Over 60 interfaces with other systems (which we analysed and built) indicate the depth of integration into Coop's IT landscape: as well as SAP, these include logistics and cash register and weighing systems that all have to communicate with one another. We approached this challenge with the deepest respect: major financial losses and reputational damage would very soon be caused if this business-critical software were to crash at a major distributor such as the Coop! For this reason, modularisation and test automation were very high on our list of priorities from the outset.

A simple but unconventional solution

We chose an unconventional approach to arrive at our solution in order to ensure high performance with such large data volumes: instead of using all the servers for the entire computing process, we formed outlet pools and assigned a specific number of outlets to each server. This means that every server can fill its caches with data for the selected outlets. The conventional approach would have been to allow every server to serve every outlet, in order to ensure failover security. However, this would not have been scalable in practice. With the approach we chose, we achieved very high server availability – confirming once again that the secret of high availability is to opt for the simple solution.

Machine learning for retailers

Do individual solutions still have a future in retailing? Yes, they certainly do. SAP is a reliable basic tool that can map all the standard processes. But competition-critical applications will continue to need individual solutions – they are essential so that a company can stand out from its competitors. And in the future, many more developments are in store that will offer a host of opportunities for retailing. We need only consider the vast potential offered by data science and machine learning: with the help of IT, customer interest forecasting systems can be built on the basis of previous shopping behaviour and other premises. We can therefore present customers with campaigns and sales suggestions much more selectively. In this regard, our

Mobile stock control in branches

retailers are still lagging far behind companies such as Amazon. Of course, the idea of "see-through customers" arouses fears – but we can design systems of this sort so that the customer can explicitly agree to all data usage and communication. Many are already doing so – and after all, people prefer to receive recommendations that interest them rather than impersonal mass mailshots.

Enormous competitive advantages for companies can be developed on this basis. And that is why I look forward with great enthusiasm to the future of retailing, with all the scope for entrepreneurial initiative that it will offer.

André Naef has worked for Ergon since 2000. He began as an engineer and project manager; he was a departmental manager from 2005 to 2008 and has been responsible for strategic business development since 2008.